

REMARKS/ARGUMENTS

Prior to entry of this amendment, claims 1-10 are pending in the subject application.

By the instant amendment, claim 1 is amended. Claim 1 is the sole independent claim.

Applicants appreciate the Examiner's acceptance of the drawings filed on October 9, 2003.

Claims 1-10 are presented to the Examiner for further prosecution on the merits.

A. Asserted Obviousness Rejection

In the outstanding Office Action Made Final, mailed October 31, 2005, the Examiner rejected claims 1-10 under 35 U.S.C. § 103(a), as unpatentable over U.S. Patent No. 6,690,032 to Umetsu (hereinafter "the Umetsu reference") in view of U.S. Patent No. 6,618,200 to Shimizu et al. (hereinafter "the Shimizu et al. reference"). Claim 1 is amended by the instant amendment, and applicants respectfully submit that the cited prior art references fail to suggest, much less disclose, each and every element of the rejected claims for at least the reasons set forth below.

By the instant amendment, claim 1 is amended to more particularly recite aspects of the present invention. No new matter is added, and support for the instant amendment may be found in, e.g., FIGS. 3A-3E of the application as originally filed. Claim 1 presently recites, in part,

performing a second etching in which the preliminary via hole is etched to form a blind via hole having a smooth surface and extending through the glass wafer but not through the first material layer on the rear surface of the glass wafer, such that the first material layer on the rear surface of the glass wafer is exposed through the blind via hole; and

eliminating the first material layer, such that the blind via hole is transformed into a through hole.

Applicants respectfully submit that neither the Umetsu reference nor the Shimizu et al. reference, whether alone or in combination, discloses or suggests the aspects of claim 1

noted above. In particular, applicants submit that the Umetsu reference discloses, at most, providing a patterned mask on a glass substrate, forming small holes or depressions and enlarging them to form through holes. However, the Umetsu reference fails to disclose or suggest forming a “blind via hole . . . extending through the glass wafer but not through the first material layer on the rear surface of the glass wafer,” as presently recited in claim 1.

Moreover, the Shimizu et al. reference discloses, at most, forming a protection layer on front and rear surfaces of a glass substrate and forming a concave recess in a front surface of the glass substrate. However, the Shimizu et al. reference fails to disclose or suggest forming a “blind via hole . . . extending through the glass wafer but not through the first material layer on the rear surface of the glass wafer,” as presently recited in claim 1. Indeed, if the concave recess of the Shimizu et al. reference were to be formed extending through the glass substrate, it would not be suitable for its intended purpose as a micro lens as taught in the Shimizu et al. reference.

In contrast, the present invention includes forming a blind via hole extending through the glass wafer but not through the first material layer on the rear surface of the glass wafer, such that the first material layer on the rear surface of the glass wafer is exposed through the blind via hole. Neither the Umetsu reference nor the Shimizu et al. reference, whether alone or in combination, disclose or suggest this aspect of the present invention as presently recited in claim 1. This contrast is even more strikingly evident when FIGS. 3D-3E of the subject application (left) are compared to FIGS. 3(d)-3(e) of the Shimizu et al. reference (right):

Present Invention

FIG. 3D

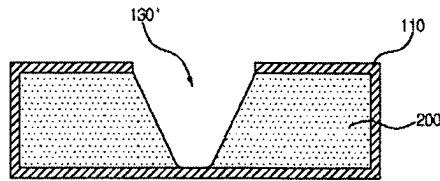


FIG. 3E

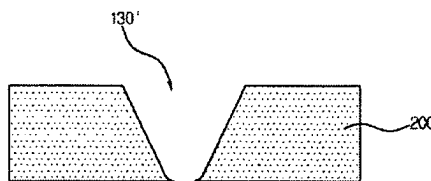
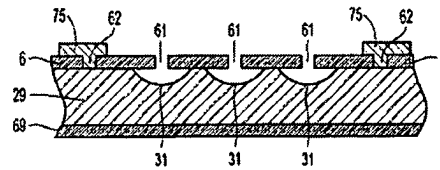
Shimizu et al. Reference

FIG. 3(d)

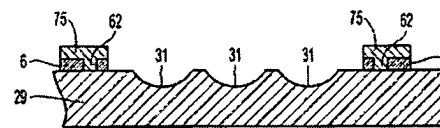


FIG. 3(e)

Accordingly, the proposed combination of the Umetsu and Shimizu et al. references fails to disclose or suggest each and every element of claim 1, and claim 1 is therefore believed to be allowable over the cited prior art references. The remaining rejected claims, viz., claims 2-10, depend, either directly or indirectly, from claim 1 and are believed to be similarly allowable. Accordingly, applicants respectfully request that this rejection be reconsidered and withdrawn and a notice of allowance provided.

B. Entry of Amendment Requested

Applicants respectfully submit that the pending claims are in condition for allowance, and that the instant amendment overcomes the rejection set forth in the outstanding Office action. Accordingly, entry of the above amendment after final is respectfully requested.

C. Conclusion

Since the cited prior art relied on to reject the claims of the subject application fails to anticipate or render obvious the present invention, applicants respectfully submit that

claims 1-10 are in condition for allowance, and a notice to that effect is respectfully requested.

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

Respectfully submitted,

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Date: January 3, 2006


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PETITION and DEPOSIT ACCOUNT CHARGE AUTHORIZATION

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.